

**AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

- Claim 1 (Withdrawn):** A method of preventing the formation of fractures in a subterranean formation during a drilling operation comprising the steps of:
- providing a lightweight drilling fluid that comprises an aqueous fluid and generated gas, the generated gas being generated by a reaction of a gas generating chemical in the aqueous fluid, the gas generating chemical being present in an amount of from about 0.1% to about 10% by weight of the aqueous fluid; and
- using the lightweight drilling fluid in the drilling operation to drill a well bore in the subterranean formation.
- Claim 2 (Withdrawn):** The method of claim 1 wherein the lightweight drilling fluid or the aqueous fluid comprises a gas production rate enhancing agent.
- Claim 3 (Withdrawn):** The method of claim 2 wherein the gas production rate enhancing agent comprises a copper salt or an iron salt.
- Claim 4 (Withdrawn):** The method of claim 2 wherein the gas production rate enhancing agent is present in the lightweight drilling fluid or the aqueous fluid in an amount in the range of from about 5% to about 25% by weight of the gas generating chemical.
- Claim 5 (Withdrawn):** The method of claim 1 wherein the aqueous fluid comprises an activator that comprises a base, a buffer, or an oxidizer.
- Claim 6 (Withdrawn):** The method of claim 5 wherein the activator comprises an alkali metal hydroxide, an alkaline earth metal hydroxide, an alkaline metal salt of a silicate, potassium phosphate, potassium monohydrogenphosphate, sodium carbonate, sodium bicarbonate, or a mixture thereof.
- Claim 7 (Withdrawn):** The method of claim 5 wherein the activator comprises an alkaline salt of a peroxide, an alkaline earth metal salt of a peroxide, a persulfate, a perborate, a chlorite, an iodate, a bromate, chloroaurate, arsenate, antimonite, or a molybdate anion.
- Claim 8 (Withdrawn):** The method of claim 5 wherein the activator comprises ammonium persulfate, sodium persulfate, potassium persulfate, sodium chlorite, sodium chlorate, hydrogen peroxide, sodium perborate, or sodium peroxy carbonate.

- Claim 9 (Withdrawn):** The method of claim 5 wherein the oxidizer is included in an amount in the range of from about 200% to about 1500% by weight of the gas generating chemical.
- Claim 10 (Withdrawn):** The method of claim 5 wherein the oxidizer is included in an amount in the range of from about 400% to about 1200% by weight of the gas generating chemical.
- Claim 11 (Withdrawn):** The method of claim 5 wherein the activator is present in an amount sufficient to maintain the pH of the aqueous fluid in the range of from about 10 to about 14.
- Claim 12 (Withdrawn):** The method of claim 1 wherein the generated gas is generated in the lightweight drilling fluid during the drilling operation.
- Claim 13 (Withdrawn):** The method of claim 1 wherein the generated gas comprises nitrogen, ammonia, carbon dioxide, or carbon monoxide.
- Claim 14 (Withdrawn):** The method of claim 1 wherein the gas generating chemical comprises a hydrazine group, an azo group, hydrazine, azodicarbonamide, azobis(isobutyronitrile), p-toluene sulfonyl hydrazide, p-toluene sulfonyl(semicarbazide), carbohydrazide, p-p' poxybis(benzenesulfonyl hydrazide), an ammonium salt of an organic acid, an ammonium salt of an inorganic acid, hydroxyl amide sulfate, carbamide, or a mixture thereof.
- Claim 15 (Withdrawn):** The method of claim 1 wherein the gas generating chemical is present in an amount of from about 0.3% to about 8% by weight of the aqueous fluid.
- Claim 16 (Withdrawn):** The method of claim 1 wherein the gas generating chemical is present in an amount of about 4%.
- Claim 17 (Withdrawn):** The method of claim 1 wherein the gas is generated by a thermal reaction of the gas generating chemical or by a reaction between the gas generating chemical and an alkaline reagent.
- Claim 18 (Withdrawn):** The method of claim 1 wherein the lightweight drilling fluid or the aqueous fluid comprises a surfactant.
- Claim 19 (Withdrawn):** The method of claim 1 wherein the lightweight drilling fluid or the aqueous fluid comprises a mixture of a foaming and a foam stabilizing surfactant.

- Claim 20 (Withdrawn):** The method of claim 18 or 19 wherein the surfactant or the mixture comprises an ethoxylated alcohol ether sulfate surfactant, an alkyl amidopropylbetaine surfactant, an alkene amidopropylbetaine surfactant, an alkyl amidopropyldimethylamine oxide surfactant, an alcohol ether sulfate, cocoamidopropyl betaine, an amine oxide, or an alkene amidopropyldimethylamine oxide surfactant.
- Claim 21 (Withdrawn):** The method of claim 18 or 19 wherein the surfactant or the mixture is present in the lightweight drilling fluid or the aqueous fluid in an amount of from about 0.5% to about 5% by weight of a water component in the lightweight drilling fluid or the aqueous fluid.
- Claim 22 (Withdrawn):** A method of separating a first fluid and a second fluid in a subterranean formation comprising the steps of:
- providing a lightweight spacer fluid that comprises an aqueous fluid and generated gas, the generated gas being generated by a reaction of a gas generating chemical in the aqueous fluid, the gas generating chemical being present in an amount of from about 0.1% to about 10% by weight of the aqueous fluid;
  - providing a first fluid and a second fluid, the second fluid to be introduced to the subterranean formation after the first fluid;
  - placing the first fluid into the subterranean formation;
  - placing the lightweight spacer fluid into the subterranean formation to substantially separate the first fluid from the second fluid; and
  - placing the second fluid into the subterranean formation.
- Claim 23 (Withdrawn):** The method of claim 22 wherein the first fluid and the second fluid are chemically incompatible fluids.
- Claim 24 (Withdrawn):** The method of claim 22 wherein the first fluid is a drilling fluid and the second fluid is a cement slurry.
- Claim 25 (Withdrawn):** The method of claim 22 wherein the first fluid is a first drilling fluid and the second fluid is a second drilling fluid.
- Claim 26 (Withdrawn):** The method of claim 22 wherein the spacer fluid or the aqueous fluid comprises a gas production rate enhancing agent.
- Claim 27 (Withdrawn):** The method of claim 26 wherein the gas production rate enhancing agent comprises a copper salt or an iron salt.

- Claim 28 (Withdrawn):** The method of claim 22 wherein the aqueous fluid comprises an activator that comprises a base, a buffer, or an oxidizer.
- Claim 29 (Withdrawn):** The method of claim 28 wherein the activator comprises an alkali metal hydroxide, an alkaline earth metal hydroxide, an alkaline metal salt of a silicate, potassium phosphate, potassium monohydrogenphosphate, sodium carbonate, or sodium bicarbonate, an alkaline salt of a peroxide, an alkaline earth metal salt of a peroxide, a persulfate, a perborate, a chlorite, an iodate, a bromate, chloraurate, arsenate, antimonite, a molybdate anion, ammonium persulfate, sodium persulfate, potassium persulfate, sodium chlorite, sodium chlorate, hydrogen peroxide, sodium perborate, or sodium peroxy carbonate.
- Claim 30 (Withdrawn):** The method of claim 28 wherein the oxidizer is included in an amount in the range of from about 400% to about 1200% by weight of the gas generating chemical.
- Claim 31 (Withdrawn):** The method of claim 28 wherein the activator is present in an amount sufficient to sustain the pH of the aqueous fluid in the range of from about 10 to about 14.
- Claim 32 (Withdrawn):** The method of claim 22 wherein the gas generating chemical comprises a hydrazine group, an azo group, hydrazine, azodicarbonamide, azobis(isobutyronitrile), p-toluene sulfonyl hydrazide, p-toluene sulfonyl(semicarbazide, carbohydrazide, p-p' poxybis(benzenesulfonyl hydrazide), an ammonium salt of an organic acid, an ammonium salt of an inorganic acid, hydroxyl amide sulfate, carbamide, or a mixture thereof.
- Claim 33 (Withdrawn):** The method of claim 22 wherein the lightweight spacer fluid or the aqueous fluid comprises a surfactant or a mixture of a foaming and a foam stabilizing surfactant.
- Claim 34 (Withdrawn):** The method of claim 33 wherein the surfactant or the mixture comprises an ethoxylated alcohol ether sulfate surfactant, an alkyl amidopropylbetaine surfactant, an alkene amidopropylbetaine surfactant, an alkyl amidopropyldimethylamine oxide surfactant, or an alkene amidopropyldimethylamine oxide surfactant.
- Claim 35 (Withdrawn):** The method of claim 33 wherein the surfactant or the mixture is present in the lightweight drilling fluid or the aqueous fluid in an amount of from about

0.5% to about 5% by weight of a water component in the lightweight drilling fluid or the aqueous fluid..

**Claim 36 (Withdrawn):** A method of forming a lightweight well treatment fluid for use in a subterranean formation comprising the steps of: mixing an aqueous fluid, a surfactant, and a gas generating chemical, the gas generating chemical being present in an amount of from about 0.1% to about 10% by weight of a water component in the aqueous fluid, to form a well treatment fluid; and allowing the gas generating chemical to react so as to generate a gas in the well treatment fluid to form a lightweight well treatment fluid.

**Claim 37 (Withdrawn):** The method of claim 36 further comprising using a gas production rate enhancing agent to increase the rate the gas is generated in the well treatment fluid.

**Claim 38 (Withdrawn):** The method of claim 37 wherein the gas production rate enhancing agent comprises a copper salt or an iron salt.

**Claim 39 (Withdrawn):** The method of claim 36 wherein the gas generating chemical comprises a hydrazine group, an azo group, hydrazine, azodicarbonamide, azobis(isobutyronitrile), p-toluene sulfonyl hydrazide, p-toluene sulfonyl(semicarbazide, carbohydrazide, p-p' poxybis(benzenesulfonyl hydrazide), an ammonium salt of an organic acid, an ammonium salt of an inorganic acid, hydroxyl amide sulfate, carbamide, or a mixture thereof.

**Claim 40 (Withdrawn):** The method of claim 36 wherein the gas generating chemical is present in an amount of from about 0.3% to about 8% by weight of the aqueous fluid.

**Claim 41 (Withdrawn):** The method of claim 36 wherein the surfactant comprises a mixture of a foaming and a foam stabilizing surfactant.

**Claim 42 (Withdrawn):** The method of claim 36 wherein the surfactant comprises an ethoxylated alcohol ether sulfate surfactant, an alkyl amidopropylbetaine surfactant, an alkene amidopropylbetaine surfactant, an alkyl amidopropyldimethylamine oxide surfactant, or an alkene amidopropyldimethylamine oxide surfactant.

**Claim 43 (Withdrawn):** A method of enhancing the permeability of a subterranean zone comprising the steps of:

allowing a gas generating chemical to react in an aqueous fluid to generate generated gas;

adding the generated gas to an aqueous acidic well treatment fluid to produce a foamed aqueous acidic well treatment fluid; and

using the foamed aqueous acidic well treatment fluid in a treatment to enhance the permeability of a subterranean zone.

**Claim 44 (Withdrawn):** The method of claim 43 wherein the generated gas is produced by a reaction of the gas generating chemical and an activator in the aqueous fluid, the activator comprising a base, a buffer, or an oxidizer.

**Claim 45 (Withdrawn):** The method of claim 44 wherein the activator is capable of increasing the pH of the aqueous fluid to a range of about 10 to about 14.

**Claim 46 (Withdrawn):** The method of claim 43 wherein the aqueous fluid comprises a water component.

**Claim 47 (Withdrawn):** The method of claim 46 wherein the gas generating chemical is present in the aqueous fluid in an amount in the range of from about 10% to about 100% by weight of a water component therein.

**Claim 48 (Withdrawn):** The method of claim 44 wherein the activator is present in an amount of about 400% to about 1200% by weight of the gas generating chemical in the aqueous fluid.

**Claim 49 (Withdrawn):** The method of claim 43 wherein the generated gas is added to the aqueous acidic well treatment fluid as the aqueous acidic well treatment fluid is being pumped into a well bore penetrating or neighboring the subterranean zone.

**Claim 50 (Withdrawn):** The method of claim 43 wherein the aqueous acidic well treatment fluid comprises a surfactant.

**Claim 51 (Withdrawn):** The method of claim 50 wherein the surfactant comprises a mixture of foaming and foam stabilizing surfactants.

**Claim 52 (Withdrawn):** The method of claim 50 wherein the surfactant comprises a linear alcohol ethoxylate, a betaine, or a nonylphenol ethoxylate.

**Claim 53 (Withdrawn):** The method of claim 50 wherein the surfactant is present in an amount of from about 1% to about 5% by weight of a water component in the foamed aqueous acidic well treatment fluid.

**Claim 54 (Withdrawn):** The method of claim 43 wherein the aqueous acidic well treatment fluid comprises an acid component that comprises hydrochloric acid, hydrofluoric acid,

- fluoroboric acid, formic acid, acetic acid, citric acid, lactic acid, thioglycolic acid, glycolic acid, or a mixture thereof.
- Claim 55 (Withdrawn):** The method of claim 54 wherein the acid component is present in the aqueous acidic well treatment fluid in an amount up to about 30% by weight of the aqueous acidic well treatment fluid.
- Claim 56 (Withdrawn):** A method of enhancing the recovery of spent acid from a subterranean zone comprising the step of contacting the spent acid with a foamed aqueous acidic well treatment fluid in the subterranean zone.
- Claim 57 (Withdrawn):** The method of claim 56 wherein the foamed aqueous acidic well treatment fluid comprises an acid component that comprises hydrochloric acid, hydrofluoric acid, fluoroboric acid, formic acid, acetic acid, citric acid, lactic acid, thioglycolic acid, glycolic acid, or a mixture thereof.
- Claim 58 (Withdrawn):** The method of claim 57 wherein the acid component is present in the aqueous acidic well treatment fluid in an amount up to about 30% by weight of the aqueous acidic well treatment fluid.
- Claim 59 (Withdrawn):** The method of claim 56 wherein the spent acid results from an acid stimulation treatment in the subterranean zone.
- Claim 60 (Withdrawn):** The method of claim 56 wherein the foamed aqueous acidic well treatment fluid comprises gas generated by a reaction of a gas generating chemical.
- Claim 61 (Withdrawn):** The method of claim 56 wherein the foamed aqueous acidic well treatment fluid comprises a surfactant.
- Claim 62 (Withdrawn):** A lightweight drilling fluid that comprises an aqueous fluid and a gas generated by a reaction of a gas generating chemical in the aqueous fluid, the gas generating chemical being present in an amount of from about 0.1% to about 10% by weight of the aqueous fluid.
- Claim 63 (Withdrawn):** The composition of claim 62 wherein the lightweight drilling fluid or the aqueous fluid comprises a gas production rate enhancing agent.
- Claim 64 (Withdrawn):** The composition of claim 63 wherein the gas production rate enhancing agent comprises a copper salt or an iron salt.
- Claim 65 (Withdrawn):** The composition of claim 63 wherein the gas production rate enhancing agent is present in the lightweight drilling fluid or the aqueous fluid in an

amount in the range of from about 5% to about 25% by weight of the gas generating chemical.

**Claim 66 (Withdrawn):** The composition of claim 62 wherein the aqueous fluid comprises an activator that comprises a base, a buffer, or an oxidizer.

**Claim 67 (Withdrawn):** The composition of claim 66 wherein the activator comprises an alkali metal hydroxide, an alkaline earth metal hydroxide, an alkaline metal salt of a silicate, potassium phosphate, potassium monohydrogenphosphate, sodium carbonate, or sodium bicarbonate, an alkaline salt of a peroxide, an alkaline earth metal salt of a peroxide, a persulfate, a perborate, a chlorite, an iodate, a bromate, chloraurate, arsenate, antimonite, a molybdate anion, ammonium persulfate, sodium persulfate, potassium persulfate, sodium chlorite, sodium chlorate, hydrogen peroxide, sodium perborate, or sodium peroxy carbonate.

**Claim 68 (Withdrawn):** The composition of claim 66 wherein the oxidizer is included in an amount in the range of from about 200% to about 1500% by weight of the gas generating chemical.

**Claim 69 (Withdrawn):** The composition of claim 66 wherein the oxidizer is included in an amount in the range of from about 400% to about 1200% by weight of the gas generating chemical.

**Claim 70 (Withdrawn):** The composition of claim 66 wherein the activator is present in an amount sufficient to maintain the pH of the aqueous fluid in the range of from about 10 to about 14.

**Claim 71 (Withdrawn):** The composition of claim 62 wherein the gas comprises nitrogen, ammonia, carbon dioxide, or carbon monoxide.

**Claim 72 (Withdrawn):** The composition of claim 62 wherein the gas generating chemical comprises a hydrazine group, an azo group, hydrazine, azodicarbonamide, azobis(isobutyronitrile), p-toluene sulfonyl hydrazide, p-toluene sulfonyl(semicarbazide, carbohydrazide, p-p' poxybis(benzenesulfonyl hydrazide), an ammonium salt of an organic acid, an ammonium salt of an inorganic acid, hydroxyl amide sulfate, carbamide, or a mixture thereof.

**Claim 73 (Withdrawn):** The composition of claim 62 wherein the gas generating chemical is present in an amount of from about 0.3% to about 8% by weight of the aqueous fluid.



- Claim 74 (Withdrawn):** The composition of claim 62 wherein the gas generating chemical is present in an amount of about 4%.
- Claim 75 (Withdrawn):** The composition of claim 62 wherein the gas is generated by a thermal reaction of the gas generating chemical or by a reaction between the gas generating chemical and an alkaline reagent.
- Claim 76 (Withdrawn):** The composition of claim 62 wherein the lightweight drilling fluid or the aqueous fluid comprises a surfactant.
- Claim 77 (Withdrawn):** The composition of claim 62 wherein the lightweight drilling fluid or the aqueous fluid comprises a mixture of a foaming and a foam stabilizing surfactant.
- Claim 78 (Withdrawn):** The composition of claim 76 wherein the surfactant comprises an ethoxylated alcohol ether sulfate surfactant, an alkyl amidopropylbetaine surfactant, an alkene amidopropylbetaine surfactant, an alkyl amidopropyldimethylamine oxide surfactant, or an alkene amidopropyldimethylamine oxide surfactant.
- Claim 79 (Withdrawn):** The composition of claim 76 wherein the surfactant is present in the lightweight drilling fluid or the aqueous fluid in an amount of from about 0.5% to about 5% by weight of a water component in the lightweight drilling fluid or the aqueous fluid.
- Claim 80 (Withdrawn):** A lightweight spacer fluid that comprises an aqueous fluid and a gas generated by a reaction of a gas generating chemical in the aqueous fluid, the gas generating chemical being present in an amount of from about 0.1% to about 10% by weight of the aqueous fluid.
- Claim 81 (Withdrawn):** The composition of claim 80 wherein the spacer fluid or the aqueous fluid comprises a gas production rate enhancing agent.
- Claim 82 (Withdrawn):** The composition of claim 81 wherein the gas production rate enhancing agent comprises a copper salt or an iron salt.
- Claim 83 (Withdrawn):** The composition of claim 80 wherein the gas generating chemical comprises a hydrazine group, an azo group, hydrazine, azodicarbonamide, azobis(isobutyronitrile), p-toluene sulfonyl hydrazide, p-toluene sulfonyl(semicarbazide, carbohydrazide, p-p' poxybis(benzenesulfonyl hydrazide), an ammonium salt of an organic acid, an ammonium salt of an inorganic acid, hydroxyl amide sulfate, carbamide, or a mixture thereof.

- Claim 84 (Withdrawn):** The composition of claim 80 wherein the spacer fluid or the aqueous fluid comprises a surfactant or a mixture of a foaming and a foam stabilizing surfactant.
- Claim 85 (Withdrawn):** The composition of claim 84 wherein the surfactant or the mixture comprises an ethoxylated alcohol ether sulfate surfactant, an alkyl amidopropylbetaine surfactant, an alkene amidopropylbetaine surfactant, an alkyl amidopropyldimethylamine oxide surfactant, or an alkene amidopropyldimethylamine oxide surfactant.
- Claim 86 (Withdrawn):** The composition of claim 84 wherein the surfactant or the mixture is present in the lightweight drilling fluid or the aqueous fluid in an amount of from about 0.5% to about 5% by weight of a water component in the lightweight drilling fluid or the aqueous fluid.
- Claim 87 (Withdrawn):** A foamed aqueous acidic well treatment fluid that comprises an acid component and generated gas, the generated gas being a product of a reaction of a gas generating chemical in an aqueous fluid.
- Claim 88 (Withdrawn):** The composition of claim 87 wherein the aqueous fluid comprises an activator capable of reacting with the gas generating chemical to produce the generated gas, the activator comprising a base, a buffer, or an oxidizer.
- Claim 89 (Withdrawn):** The composition of claim 87 wherein the aqueous fluid comprises a water component.
- Claim 90 (Withdrawn):** The composition of claim 89 wherein the gas generating chemical is present in the aqueous fluid in an amount in the range of from about 10% to about 100% by weight of the water component therein.
- Claim 91 (Withdrawn):** The composition of claim 88 wherein the activator is present in an amount of about 400% to about 1200% by weight of the gas generating chemical in the aqueous fluid.
- Claim 92 (Withdrawn):** The composition of claim 87 wherein the aqueous acidic well treatment fluid or the aqueous fluid comprises a surfactant.
- Claim 93 (Withdrawn):** The composition of claim 92 wherein the surfactant comprises a mixture of foaming and foam stabilizing surfactants.
- Claim 94 (Withdrawn):** The composition of claim 92 wherein the surfactant comprises a linear alcohol ethoxylate, a betaine, or a nonylphenol ethoxylate.

- Claim 95 (Withdrawn):** The composition of claim 92 wherein the surfactant is present in an amount of from about 1% to about 5% by weight of a water component in the foamed aqueous acidic well treatment fluid.
- Claim 96 (Withdrawn):** The composition of claim 87 wherein the acid component comprises hydrochloric acid, hydrofluoric acid, fluoroboric acid, formic acid, acetic acid, citric acid, lactic acid, thioglycolic acid, glycolic acid, or a mixture thereof.
- Claim 97 (Withdrawn):** The composition of claim 87 wherein the acid component is present in the aqueous acidic well treatment fluid in an amount up to about 30% by weight of the aqueous acidic well treatment fluid.
- Claim 98 (Withdrawn):** A method of making a foamed aqueous acidic well treatment fluid comprising the steps of:
- reacting a gas generating chemical in an aqueous fluid to generate some generated gas; and
  - incorporating the generated gas into an aqueous acidic well treatment fluid to produce a foamed aqueous acidic well treatment fluid.
- Claim 99 (Withdrawn):** The method of claim 98 wherein the generated gas is incorporated into the aqueous acidic well treatment fluid as the fluid is being pumped into a well bore penetrating a subterranean formation.
- Claim 100 (Withdrawn):** A method of making a foamed well fluid that comprises a gas comprising the steps of:
- combining an aqueous fluid, a surfactant, and a gas generating chemical, the gas generating chemical being present in an amount in the range of from about .1% to 100% of a water component in the aqueous well fluid; and
  - allowing the gas generating chemical to react so that gas is generated in the aqueous fluid to form a foamed well fluid.
- Claim 101 (Withdrawn):** The method of claim 100 wherein the aqueous fluid comprises a gas production rate enhancing agent.
- Claim 102 (Withdrawn):** The method of claim 100 wherein the aqueous fluid comprises an activator that comprises a base, a buffer, or an oxidizer.

- Claim 103 (Withdrawn):** The method of claim 102 wherein the activator is present in an amount sufficient to maintain the pH of the aqueous fluid in the range of from about 10 to about 14.
- Claim 104 (Withdrawn):** The method of claim 100 wherein the gas generating chemical comprises a hydrazine group, an azo group, hydrazine, azodicarbonamide, azobis(isobutyronitrile), p-toluene sulfonyl hydrazide, p-toluene sulfonyl(semicarbazide, carbohydrazide, p-p' poxybis(benzenesulfonyl hydrazide), an ammonium salt of an organic acid, an ammonium salt of an inorganic acid, hydroxyl amide sulfate, carbamide, or a mixture thereof.
- Claim 105 (Withdrawn):** The method of claim 100 wherein the gas generating chemical is present in an amount of from about 0.3% to about 8% by weight of the aqueous fluid.
- Claim 106 (Withdrawn):** The method of claim 100 wherein the surfactant comprises an ethoxylated alcohol ether sulfate surfactant, an alkyl amidopropylbetaine surfactant, an alkene amidopropylbetaine surfactant, an alkyl amidopropyldimethylamine oxide surfactant, an alcohol ether sulfate, cocoamidopropyl betaine, an amine oxide, or an alkene amidopropyldimethylamine oxide surfactant.
- Claim 107 (Withdrawn):** The method of claim 100 further comprising the step of using the foamed well fluid in a subterranean operation.
- Claim 108 (Withdrawn):** The method of claim 107 wherein the subterranean operation comprises drilling a well bore.
- Claim 109 (Withdrawn):** The method of claim 107 wherein the subterranean operation involves using the foamed well fluid as a spacer fluid to separate a first well fluid and a second well fluid.
- Claim 110 (Withdrawn):** The method of claim 109 wherein the first well fluid and the second well fluid are chemically incompatible fluids.
- Claim 111 (Withdrawn):** The method of claim 100 wherein the foamed well fluid is acidic.
- Claim 112 (Withdrawn):** A foamed well fluid made by the method of claim 100.
- Claim 113 (Previously Presented):** A method for treating a subterranean formation, comprising: providing a mixture of an aqueous fluid, a surfactant, and a gas generating chemical, the gas generating chemical being present in an amount of from about 0.1% to about 10% by weight of a water component in the aqueous fluid, to form a well treatment fluid; allowing the gas

generating chemical to react so as to generate a gas in the well treatment fluid to form a lightweight well treatment fluid; and using the lightweight well treatment fluid to treat a subterranean formation.

**Claim 114 (Withdrawn):** The method of claim 113, wherein using the lightweight well treatment fluid to treat a subterranean formation comprises using the lightweight well treatment fluid to reduce the permeability of the formation.

**Claim 115 (Previously Presented):** The method of claim 113, wherein the lightweight well treatment fluid further comprises an acid component that comprises at least one of the following: hydrochloric acid, hydrofluoric acid, fluoroboric acid, formic acid, acetic acid, citric acid, lactic acid, thioglycolic acid, glycolic acid, or a mixture thereof.

**Claim 116 (Previously Presented):** The method of claim 115, wherein the acid component is present in the lightweight well treatment fluid in an amount up to about 30% by weight of the lightweight well treatment fluid.

**Claim 117 (Withdrawn):** The method of claim 115, wherein using the lightweight well treatment fluid to treat a subterranean formation comprises contacting the lightweight well treatment fluid with a spent acid resident in the formation, to thereby enhance recovery of the spent acid from the formation.

**Claim 118 (Withdrawn):** The method of claim 117, wherein the spent acid results from an acid stimulation treatment in the formation.

**Claim 119 (Withdrawn):** The method of claim 113, wherein using the lightweight well treatment fluid to treat a subterranean formation comprises using the lightweight well treatment fluid to drill a well bore in the formation.

**Claim 120 (Currently Amended):** The method of claim ~~120~~ 113, wherein the lightweight well treatment fluid does not comprise a surfactant.

**Claim 121 (Previously Presented):** The method of claim 113, wherein the aqueous fluid comprises an activator that comprises at least one of the following: a base, a buffer, or an oxidizer.

**Claim 122 (Previously Presented):** The method of claim 113, wherein the generated gas is generated in the lightweight well treatment fluid while the lightweight well treatment fluid is being used to treat the subterranean formation.

- Claim 123 (Previously Presented):** The method of claim 113, wherein the generated gas comprises at least one of the following: nitrogen, ammonia, carbon dioxide, or carbon monoxide.
- Claim 124 (New):** The method of claim 113, wherein the lightweight well treatment fluid or the aqueous fluid comprises a gas production rate enhancing agent.
- Claim 125 (New):** The method of claim 124, wherein the gas production rate enhancing agent comprises a copper salt or an iron salt.
- Claim 126 (New):** The method of claim 113, wherein the gas generating chemical comprises a hydrazine group, an azo group, hydrazine, azodicarbonamide, azobis(isobutyronitrile), p-toluene sulfonyl hydrazide, p-toluene sulfonyl(semicarbazide), carbohydrazide, p-p' poxybis(benzenesulfonyl hydrazide), an ammonium salt of an organic acid, an ammonium salt of an inorganic acid, hydroxyl amide sulfate, carbamide, or a mixture thereof.
- Claim 127 (New):** The method of claim 113, wherein the gas generating chemical is present in an amount of from about 0.3% to about 8% by weight of the aqueous fluid.
- Claim 128 (New):** The method of claim 113, wherein the surfactant comprises a mixture of a foaming and a foam stabilizing surfactant.
- Claim 129 (New):** The method of claim 113, wherein the surfactant comprises an ethoxylated alcohol ether sulfate surfactant, an alkyl amidopropylbetaine surfactant, an alkene amidopropylbetaine surfactant, an alkyl amidopropyldimethylamine oxide surfactant, or an alkene amidopropyldimethylamine oxide surfactant.
- Claim 130 (New):** The method of claim 113, wherein allowing the gas generating chemical to react so as to generate a gas in the well treatment fluid to form a lightweight well treatment fluid comprises allowing the gas generating chemical to react with an activator in the aqueous fluid, the activator comprising at least one of the following group: a base, a buffer, or an oxidizer.